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ABSTRACT

Literacy implies the ability to read and write, but for educated persons it also involves special skills that are fundamentally cognitive or intellectual. This ability to think critically should be taught in college composition classes, since studies have indicated that over half of the undergraduates in the United States are at the concrete operations stage (ability to classify or arrange observable data) of cognitive development or between it and the formal operations stage (ability to abstract, synthesize, or deduce without concrete experience). An important facet of the contextual nature of literacy for composition instruction is the central role that the relationship between writer and reader or audience plays. Students have yet to learn the assumptions and strategies characteristic of the interpretive community, which expresses itself through academic writing. Another way to look at literacy is as a shared, collective knowledge--as cultural literacy--while a less value-laden perspective is that of social literacy. A pervasive concern in literacy research is that literacy not be confused with the acquisition of narrow technical skills, but that students' growth to higher level literacy be promoted through the use of appropriately timed and sequenced writing assignments. Conceptions of literacy differ, but all imply for the college educated an ability to read, write, and be conscious of text and audience in ways very much like those described by the developmental psychologists. In the composition class, teaching activities should enhance or facilitate student maturity in this direction. (NKA)

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# Cognitive Development as Literacy

Jay A. Ward

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# Cognitive Development as Literacy

1987 is the 350th anniversary of Descartes' The Discourse on Method, in which he proposed that problem solvers should develop a habit of critical doubt which should be relinquished only to analytical proof. Although this proposal has been much refined in the centuries since, the Cartesian "method" still summarizes what many of us have in mind when we talk about cognitive development, and what I wish to suggest is that the ability to perform at high developmental levels, to think critically, is, in fact, what we should mean by literacy in college-educated people. I want to discuss literacy from that and other, related perspectives and, more important, to show that much of what we do and assume in our composition classes does not contribute constructively to the attainment of this goal, so that, in effect, many of our students, indeed many college graduates, are really functionally illiterate.

Literacy, of course, implies ability to read and write, but for educated persons, it also involves special skills which are fundamentally cognitive or intellectual. Over twenty years ago, Albert Kitzhaber claimed that writing improvement and intellectual growth were linked, so that in order to assist or facilitate student maturity in both areas, we have to be cognizant of recent work both in composition and in developmental psychology. I will use the familiar examples of Piaget and Perry to illustrate cognitive relations to literacy.

The general relationship between cognitive development and literacy is summarized in the 1981 AAHE/ERIC research report en-

titled Functional Literacy in the College Setting:

> Comprehension of written and spoken language is considered a high level of processing occurring only after receivers have integrated the information expressed in language into their own conceptual system. When comprehension occurs, inferences can be made, main ideas and principles can be derived, and knowledge gained can be applied in novel situations . . . . Related to the skill of comprehending language is the process of composing language, which involves movement from one's own conceptual system to a representation in oral or written discourse (10).

Both Piaget's model of the contrast between concrete operations and formal operations and Perry's stage model of growth from dualism through multiplicity to contextual relativism imply that the higher level of attainment is equivalent to just such a concept of literacy. For example, the concrete operations stage is one in which the person is able to classify, combine, separate, or arrange observable data or actual concrete objects or situations with which he or she has had direct experience; in contrast, the formal operations stage, regarded by many as the goal of education, is characterized by the ability to abstract, synthesize, deduce, hypothesize, and make logical connections without the presence of a physical object or concrete experience (Mellon and Sass 29). Studies indicate that half or more of college students are either at the concrete operations stage or transitional between it and formal operations. Perry's dualism, with its emphasis on absolute, authority-based distinctions and on rules and formulas to follow, is very nearly equivalent to concrete operations, while relativism, in which individuals learn to discriminate among views using evidence, logic, and analysis while recognizing that all knowledge is dependent on context, equates closely with formal operations. In addition, according to Piaget, a per-

son at the concrete operations level is also egocentric, unable to perceive, imagine, or respond to others' views, which is pertinent to literacy as also is Perry's related emphasis on context.

A recent article claimed that literacy involves the development of context-independent thinking (Wells 233), but this statement implies that literacy is some sort of universal which can be applied in any context, whereas, in fact, literacy is to some extent always context-dependent (Harste 58), so the person who is truly literate is the one who has achieved "competence to use language appropriately in specific contexts to advance individual and societal goals" (AAHE/ERIC 1).

From the standpoint of composition instruction, one very important facet of the contextual nature of literacy is the central role that the relationship between writer and reader or audience plays. As Walter Ong points out, students have considerable difficulty imagining readers, but this undoubtedly is easier for writers who read a great deal, since they encounter the great variety of ways in which professional writers fictionalize audience (3). Harste and Mikulecky make this same point from a semiotic perspective:

> Literacy entails the laying down of signs and sign complexes such that what is signalled to readers are the mental shifts and social actions they need to make or take in interpreting the experience. The creation of a successful text in both reading and writing cognitively involves a search for unity among and between available signs (60).

Their reference to the collaborative creation of a text points in the direction of a post-structural or deconstructionist view of literacy, in which meaning, rather than seen as residing within a text as in New Criticism, is perceived as the joint creation

of the writer and the reader, with the latter now regarded as being at the center of the process instead of outside of it (White 190). G. Douglas McGuire comments that "/W/riters create readers as well as texts; the writer needs to keep in mind the 'implied reader' designed by the text, and ~~the~~ to see the reader as an active partner in creation" (qtd. in White 191). And, finally, E. D. Hirsch posits what he terms a "universal law" for all writers the principle that the "amount of information that must be made explicit in a piece of writing is inversely proportional to the amount of information that is already shared between writer and reader" (36). This principle also lies at the heart of much research on speaking-writing relationships, especially in explaining so-called oral language interference with written discourse.

To have this sense of context means to be able to participate in what Stanley Fish calls an "interpretive community, made up of those who agree among themselves about how to read and write texts in a given context (White 192). One reason why students frequently have difficulty meeting our expectations as writers is that they have not yet learned the assumptions and strategies characteristic of that interpretive community which expresses itself through academic or scholarly writing. But even within the academic community, there are significant differences which deny the existence of a true interpretive community; the very idea of a common language in the academic world inevitably implies both tearing down the language barriers between disciplines and that literacy development must take place across the curriculum, not just in English departments (Robinson 38-39).

The importance of literacy, context, and interpretive com-

munity reflects Stanley Kozol's judgment in his recent book, Illiterate America, that literacy by definition is shared knowledge and, therefore, necessarily collective. But this realization points to what has become a controversial view of literacy as essentially cultural in nature. Hirsch's original conception, in fact, seems innocuous enough and is completely consistent with the views of literacy which I have been summarizing. For example, he writes that the "bigger invisible base" of literacy is "tacit cultural knowledge--not just linguistic knowledge, and knowledge about the topic, but also, and most important, knowledge of what others also know and expect about the topic, about the form, about the writer, and about the world. In short, the cultural dimension is that whole system of unspoken, tacit knowledge that is shared between writer and reader" (28-29). The troubling aspect of cultural literacy surfaces in comments such as those by Joseph Duffy, who writes that cultural literacy involves "a conscious sense of culture, of tradition, of our need to interpret human experience" (11). But whose culture or tradition are we talking about? Since culture is not a monolithic entity but is made up of many cultures with their own traditions and, of course, their own linguistic and communication characteristics, we are hard-pressed even to conjure up an image of what American culture, for example, is, or to identify cultural traits which are shared more or less equally by all. Just as bothersome is Hirsch's belief, which I will return to later, that cultural literacy is antecedent to any other form of literacy.

Perhaps somewhat less value-laden and, therefore, less controversial than cultural literacy is the idea of social literacy. According to this view, a literate person should see his or her

role in society differently (Harste 56-57) or should be better able to participate fully in society (Robinson 37). This position seems fully compatible with my previous comments about development and context.

This focus on literacy from a variety of perspectives--both in terms of cognitive development and in a cultural or social context--returns ultimately to consideration of the relationship between reading and writing. I have already mentioned the general concern that those who do not read widely have greater difficulty in imagining readers or audience, while Hirsch claims that a person cannot write better than he or she can read, since "/o/ne has to read one's own writing, after all, in making the most elemental stylistic choices. And how can one read one's own writing on a topic which is unfamiliar--or make guesses about one's reader's knowledge of such a topic?" (42-43). The connection among reading, writing, and cognitive development is explicit in Alan Purves' and Olive Niles' assertion that many students have great difficulty inferring from a text, dealing with its tone or structure, or in thinking about it in original or integrative ways (2), a position reinforced by Odell's claim that "the ability to read and write sensitively, thoughtfully, and independently presupposes the ability to formulate and solve problems" (37). Harste and Mikulecky tie these threads together effectively when they write that

> /b/oth reading and writing are generative processes that draw upon the participant's thought, previous experience, and social context. Effective mastery of literacy involves using reading and writing together with full recognition and use of social context (72).

Is it possible, then, from these varied approaches and per-

spectives to identify implications for composition teaching which might assist us in helping our students to achieve the sort of educated literacy which I have been describing? A few have already been hinted at; for instance, it seems clear, given the importance of writer/text/reader relations in literacy, that composition teachers should help their students to improve their literate writing by making them conscious of readers and of the ways readers interact with texts. In addition, we must assist our students in joining that academic, interpretive community of which we are already a part, helping them to understand and apply the assumptions and strategies which presently exclude many of them from that group.

However, the concern which is most pervasive in research on literacy is that we not confuse literacy with the acquisition of narrow, technical skills (Duffy 12). Rather, we must conceptualize literacy in that broader sense of high level cognitive development within a social context, and we must engage our students in activities which reflect that breadth. As the AAHE/ERIC report notes,

> literacy can be seen as helping to accomplish specific tasks. This is the level most often used in discussions of 'functional' literacy . . . . /1/iteracy also entails using language to learn and to learn to learn. Recognizing the dynamic nature of using language for learning can keep definitions of literacy from becoming narrowly focused on immediate and perhaps ultimately trivial functions (12).

But before our students can achieve this higher level literacy, we must determine their levels of cognitive development and attempt to facilitate their growth to higher levels through the use of appropriately timed and sequenced writing assignments, which are consistent with their level yet also challenging enough to stimulate growth. For example, students at lower develop-

mental levels are, to a great extent, incapable of performing inference, analysis, or argument, so we must strike a balance between conceiving of literacy too narrowly as the acquisition of skills and seeing it as reflecting desired levels of intellectual maturity which many of our students have not attained.

Linda Flower and John Hayes touch on the contrast between "classroom" literacy, which "appears to be a set of rules and models for the correct arrangement of preexistent ideas" and writing in "private life and professions," which is "a highly goal-oriented, intellectual performance" which must be seen as a thinking problem, not as one in arrangement (449-50). Interestingly, some commentators argue that in our attempt to approach writing as a process, we have come to rely on other devices, such as prewriting, to promote thinking, whereas composition itself has, in fact, become simply a matter of expression or arrangement; Scardamalia and Bereiter argue, for example, that

> /W/hen writing is simply a process of assembling knowledge, there is no dialectal process involved, and there is consequently minimal development of knowledge and understanding . . . . /T/he deepening of reflective thought is not an automatic consequence of experience in writing. It is an achievement (327).

This is not to say, of course, that we should abandon the concept of writing as a process; the theory that defines writing primarily as a product turns the writing teacher into a judge or examiner of texts and limits the teacher's role to the less valuable end of the process (White 188). A related consideration is introduced by applying Maslow's hierarchy of needs to the college composition class, as Maxine Hairston has done; she argues, with Maslow, that a person's need for safety and fear of risk are inevitably

opposed to the individual's urge toward growth and autonomy, and that the instinct for safety, which takes precedence in most people, makes them want to write by rules and formulas--in effect, as Perry dualists or concrete operationalists--rather than to take risks; she concludes that students need to be encouraged in creative risk-taking, knowing that they can do so without being penalized for it (204-05).

The most discordant note relative to improved literacy through writing is Hirsch's and is derived from his belief in the overriding importance of cultural literacy. He claims that cultural literacy is a "firm pre-requisite" for improvement in writing and that, as a result, there can be no "quick fix" to students' writing deficiencies. He writes,

> No amount of training in the skills of composition, in the writing process, and in the basics will by themselves convey the additional cultural information that underlies advancement in general literacy . . . . Except for spelling, and the motor skills used in forming letters, all aspects of grammar, vocabulary, and habitual speech patterns are determined by the earlier cultural backgrounds of our students . . . . [T]his makes it highly unlikely that we will find a single optimal technique of instruction in writing skills--unless it be the method of individual tutorial instruction (42-43).

Of course, none of us will quibble with the idea that individual instruction is desirable in the best of all possible worlds, but given uncertainty about what exactly is the common cultural knowledge that students must have in order to compensate for or overcome their acknowledged differences in cultural backgrounds, attempting to achieve cultural literacy may be neither feasible nor desirable, nor is it completely persuasive that a person is ipso facto precluded from learning to write in an educated manner if he or she has failed to attain the apparently desirable level of

cultural homogeneity.

Clearly, conceptions of literacy differ, but it seems equally clear that what they all have in mind for college-educated people is an ability to read, write, and be conscious of text and audience in ways very much like those described by the developmental psychologists. Further, in the composition class, we unintentionally hinder or impede progress toward this level of attainment and must attempt to incorporate into our teaching activities that will enhance or facilitate student maturity in this direction. This includes putting aside older ideas about literacy and broadening our sense of what the term implies. As Harste and Mikulecky put it,

> Given past conceptualizations of literacy, it does not surprise us that reading instruction focused upon testing and correcting, while writing instruction focused upon transmitting the standards of perfect transmission to future generations. When literacy is viewed as perfectable skill as opposed to functional vehicle of thought that is part of a social context, many of the benefits of literacy are lost not only for the individual, but also for society (73).

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